

Anchorage Amateur Radio Club

Christmas Party December 5th

New Officers & Upcoming Christmas Party

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Officers

President	Peter Baily WL7BW
Vice President	Paul Spatzek WL7BF
Secretay	Susan Woods NL7NN
Treasurer	John Lawson NL7NC
Trustee	John Wolfe AA0NN
Activities Chiirman	John Lynn KL0CY
News Letter Editor	Edythe Lynn KL0EO

Three Year Board Members

Bruce McCormick WL7YR
Mel Saunders AL7PB
Harvey Rookus NL7DK

One Year Board Members

Dianne Hammer NL7KN
Fred Erickson KL7VC
John Orella KL7LL
Corny Eastman KL0FK
Jack Crowell W6BUS
Dave Filley WL7CDJ

KL7G CODE PRACTICE SCHEDULE

Schedule: 7:00am, 10:00am, 4:00pm, 7:00pm, 10:00pm
AK time, every day
Frequencies: 3575khz and 145.35MHZ
Sending Speeds: 22wpm, 15wpm, 7wpm

Nets in Alaska:

The following nets are active in Southcentral Alaska:
Alaska Sniper's Net 3.920 Mhz 0300 UTC daily
Alaska Bush Net 7.087 Mhz 0500 UTC daily
Alaska Mouley Net 3.933 Mhz 0600 UTC daily
Alaska Pacific Traffic Net 14.292 Mhz 1900 UTC daily
Son of Sideband Net, 144.20 USB, Modays at 9:00 PM local
Big City Sideband Net 144.20 USB Teusdays 8:30 PM local
ARES net 147.30/90 Mhz Thursdays at 8:00 PM local
PARKA net 147.30/90 Mhz Thursdays at 9:00 PM local

Anchorage Alaska Repeaters

KL7AA systems at Flattop Mt., 2,200 ft
146.34/94 Mhz, 80 watts, autopatch, 141.3 Hz PL
223.34/224.94, 25 watts, no patch, no PL
444.70/449.70, 25 watts, autopatch, 141.3 PL
KL7ION at Mt. Gordon Lyon 4,700 ft
147.30/90 Mhz - 80 watts, no patch, no PL
KL7AA, Mt. Alyeska, 2,400 ft.
146.46/76 Mhz, 25 watts, no patch, no PL
KL7CC, Anchorage Hillside, SCRC club
146.97/37 Mhz, autopatch, 103.5 Hz PL
KL7DJE at Grubstake Peak, 4,500 ft.
147.09/69 Mhz, 25 watts, no patch, 100 Hz PL
KL7JFU, Palmer, MARA club
146.85/25, autopatch, no PL

WEB PAGES:

AARC <http://nl7nc.akconnect.com/aarc.htm>
SCRC <http://servcom.com/worcester/scrc.htm>
EARS <http://ww2.customcpu.com/kl7air/default.htm>
KL7J <http://www.alaska.net/~buchholz>

News Letter Submissions, Information or corrections:

Email: jelynnjr@customcpu.com
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President's Thoughts

Anchorage Amateur Radio Club is a great club with a lot of truly wonderful members. We have such a wide variety of interests and talents that it always astounds me. We have a lot of exceptional new members and a real group of magnificent older members too. One thing members always seem to be doing is learning something new.

One of the remarkable new things our Club members seem to be doing is mixing computers and ham radio. Many members are using computers to copy code, packet, and slow scan television. Others seem to be interested in using computers to study for higher grade licenses. A certain number of our members are using computer mathematics to calculate all sorts of propagation information, antenna parameters, do circuit analysis, and a lot more. AARC members are always growing and changing. That is part of the fascination of being a member of AARC.

Talk is the keystone of ham radio. This is the thing that personalizes and humanizes what might otherwise be "only" a highly technical hobby. This ability to communicate immediately, and in person, tends to make AARC members aware of almost everything going on in the world around them. There is no limit, no provincialism, no narrow local view of the world. Hams in AARC have interests in not only what is going on in Anchorage but in Alaska as a whole, and even Japan, Germany, Antarctica, Pitcarin Island, and every place in between. Some AARC members even go out of this world for their hobby with satellite and moon bounce

communications. At a recent meeting Roger Hansen gave a quick report on radio interference he experienced coming from the moon. Being the builder of some of the World's first satellites that is something I thought would never happen! It only points out that we have a wide ranging and exciting group of people here at AARC. How else could a person get hands-on access to so much real technology, so many languages, and a truly world view, all rolled into one accessible hobby. Surely AARC must be a great place for young people to grow, and for older people to keep on growing while having a good time.

Unlike many other clubs AARC's loyal members are remarkably wide spread geographically. Indeed, AARC membership is located in 23 states! Six percent of AARC members live in Washington state, 2.8% in Texas, 0.9% in Idaho, 0.9% in Maryland, 0.9% in Arizona, 0.6% in Oregon, and about 0.3% in 16 other states.¹

¹ CT, CO, NV, ND, NC, UT, OH, SC, NM, ME, NJ, PA, OK, IN, FL, GA.

Unlike most other amateur radio clubs in the United States AARC supports higher education in a big way, and also supports many other needy public endeavors with real substantial cash and help contributions. We now have an AARC scholarship fund amounting to almost \$150,000. dollars. At our November meeting we heard from the five students receiving scholarships from the interest on this money. Earlier in the year I gave a check for \$10,000. dollars to Alaska Pacific University to be added to our scholarship fund and was invited to speak at a meeting of top philanthropists in Alaska. But, AARC also contributed \$1,000 dollars each to The Salvation Army, Anchorage Senior Center, Alaska Kidney Foundation, Alaska Mountain Rescue Group, the Science, Technology and Applied Mathematics Program (STAMP), Hope Cottages, Blood Bank of Alaska, a number of Alaskan repeater systems, and perhaps others that I have forgotten as I write this. How many other amateur radio clubs in the world can say this? Everyone of our members deserves a good big pat on the back for being part of a great hobby and a great Club!

Robert Wilson, AL7KK, outgoing president
Ref: AARC-EDLRCW

Christmas Potluck

The Christmas Party will be held at the Atwood Center of APU at 6:00pm. There will be Santa Claus and presents for the Kids!!! Bring the whole family and new (and future) ham friends for the fun and games. The after dinner musical entertainment will be by Wade Hamton Miller, a nationally recognized performer on the mountain dulcimer, playing familiar songs both acoustically and amplified.

The club will furnish Ham, Turkey, and the drinks again this year. We are asking the members to please bring the following items, with a little extra for visitors:

Novice	Vegetables
Techs & Tech+	Hot Dish
General	Salad
Advanced	Bread, Appetizers
Extra	Dessert

The Schedule for the evening

Appetizers	6:00 - 6:30
Dinner	6:30 - 7:30
Santa & Music	7:30 - 8:30
Door Prize Drawing	8:30

The door prize drawing is for club members only, Is a
ICOM 2 meter Mobil Radio (Icom 2000 H)

If you know that you are coming, please RSVP to Peter at
275-9480 by Dec. 1st, but come either way.

MINUTES OF LAST MEETING

The November 7th General meeting was opened by Rob Wilson AL7KK at 7:10pm Introductions followed.

The minutes of the October meeting were read and approved.

John Lawson NL7NC exhibited an impressive check for \$18,000, the most recent one for the gaming account.

Roger Hansen KL7HFQ reported that the moon bounce has been so strong that contest entrants were interfering with one another so much that signals were difficult to differentiate. "AWESOME".

Rob AL7KK presented his version of an extremely simple 2-meter antenna that could get a 1 to 1 SWR with a 3 DB gain while sitting on top of his refrigerator. That, too, was impressive.

On Dec. 2nd of this year there will be a gate #4 for vanity call signs.

RE Scanner bill HR# _____, please send letters to your congressmen in opposition to it, but do be polite. Vituperative, abusive, or rude language can have negative results and put the hams in a bad light.

The RF Eexposure reulations are in the last QST.

There are probelms with Little Leos (low earth orbit) satellites. We are losing frequencies to companies like Motorola and Comsat. Rob is working on getting more low frequency bands opened up for Hams.

Ramsey is a company that offers good home projects. The internet has a catalog for down loading. Please check with Rob for details.

The Treasurer-Pro-Tem (John Lawson NL7NC) reported that there was \$5,135.00 in our checking account and \$28,000.00 in the gaming account. A Balance sheet was passed around for perusal by all the members present. John also told us that the proposed Budget for next year has to be acted upon at this meeting. For which it was, it passed.

Doug Dickinson KL7IKX presented a tech report. After experiencing a 360 degree turn on the ice, he did not proceed to the UHF repeater site. He will have to get there to identify its problem.

The RF and Packet equipment on Site Summit have been replaced. They're working fine so far. It's a strong station but is intermittently scratchy and broken. Since we share that

band with the military, we need special permission to use more than 50 Watts out.

Roger LK7HFQ, our VEC man, says that the old 610 Forms **WILL NOT** be accepted by FCC after Jan. 1st. You should get renewals in before then or be prepared for a change.

John Wolfe AA0NN, new club trustee, offered a choice of club jackets in the \$100.00 range. He requested a show of hands of those who might be interested. TO BE CONTINUED.....

There are some new 2-Meter SSB nets forming. On Mondays there is the "Son of Sideband" at 9pm. on 144.2 USB with a 6-Meter extention at 10pm. on 50.125 USB..Seventy stations have called in already. On Tuesdays at 8:30pm is the "Big City Net" on 144.2 USB with 6-Meter extention at 9:00pm on 50.125 USB.

The proposed Budget for 1998 was distributed, voted on, and passed.

Bruce McCormick NL7YR relayed the appreciation of the Mountain Rescue Group for the Special Radio Equipment acquired with the Grant from AARC.

Five Scholarship Recipients (Mandy, Jeanette, Alex, Heidi, and Mrs. Carter) each gave a short speech outlining their use of the AARC \$1,00.00Scholarships that they received, they expressed their gratitude. Following those, there was discussion of wys to give more.

Gene Eaton AL7HX is still working with APU to come up with the proper formula in which to more effectively handle the Scholarships, so that more students could financialy benefit for them. (THANKS, Gene)

The Nominations for Officers was closed and voting ensued. The 1998 Officers are as follows:

*President	Peter Bailey WL7BW
*Vice-Presiden	Paul Spatzek WL7BF
*Treasurer	John Lawson NL7NC
*Activities Dir.	John Lynn KL0CY
*Secretary	Susan Wood NL7NN

3-Year Board Member	John Wolfe AA0NN
1-Year Board Members	Jack Crowell W6BUS
	Fred Erickson KL7VC
	Dave Filley WL7CDJ
	Corny Eastman KL0FK
	Diane Hammer NL7KN
	John Orella KL7LL

CONGRATULATIONS TO ALL!!!!

Respectfully submitted by Arlene KL7HO for Susan NL7NN

Weekly informal gatherings:

* **Tuesdays, 11:30am to 1:00pm:** Join the gang for lunch and an eyeball QSO at the Royal Fork, Old Seward Hwy (South of Dimond Center)

* **Saturdays, 7:30am:** Here is a great way to get started on the week-end come and meet with some of the locals and have a great breakfast at Phillips Restaurant, at the corner of Arctic and International. Great Fun.

New 75 Meter Net

Shari MacGregor AL7FJ is starting up a 75 Meter net every afternoon at 2:00 PM on 3910 Khz. If you have any questions on this new net be sure to give her a call at (907) 892-8008

UPCOMING EVENTS

Dec 3: License Exams. 6:30pm Carr-Gottstein Building, APU Campus. Bring photo ID, copy of license (if any) and any certificates of completion.

Dec. 5: AARC general meeting will be the Christmas Potluck starting at 6:00 PM in the Atwood Center. There will be no formal meeting, just the Christmas Party at the Atwood Center.

Dec. 12: SCRC Christmas Party. 6:00pm, Regal Alaska Hotel (see announcement in the ACRC Newsletter for further information)

Dec. 13: License Exams, Hope Cottage Offices, 540 W. International in the Board Room. At 2pm. Be sure to bring photocopy of your license, photo ID, and any certificates of completed elements.

A Ham's Night Before Christmas

Clement Clarke Moore's Classic Christmas Tale

Thank you Gary Pearce - KN4AQ
The Raleigh Amateur Radio Society, Raleigh, NC

Tw'as the night before Christmas,
And all through two-meters,
Not a signal was keying up
Any repeaters.

The antennas reached up
From the tower, quite high,
To catch the weak signals

That bounced from the sky.

The children, Tech-Pluses,
Took their HT's to bed,
And dreamed of the day
They'd be Extras, instead.

Mom put on her headphones,
I plugged in the key,
And we tuned 40 meters
For that rare ZK3.

When the meter was pegged
by a signal with power.
It smoked a small diode,
and, I swear, shook the tower.

Mom yanked off her phones,
And with all she could muster
Logged a spot of the signal
On the DX PacketCluster,

While I ran to the window
And peered up at the sky,
To see what cold generate
RF that high.

It was way in the distance,
But the moon made it gleam
A flying sleigh, with an
Eight element beam.

And a little old driver
who looked slightly mean.
So I thought for a moment,
That it might be Wayne Green.

But no, it was Santa
The Santa of Hames.
On a mission, this Christmas
To clean up the bands.

He circled the tower,
Then stopped in his track,
And he slid down the coax
Right into the stack.

While Mom and I hid
Behind stacks of CQ,
This Santa of hamming
Knew just what to do.

He cleared off the shack desk
Of paper and part,
And filled out all my late QSLs
Just for a start.

He ran copper braid,
Took a steel rod and pounded
It into the earth, till
The station was grounded.

He tightened loose fittings,
Resoldered connections,

Cranked down modulation,
Installed lightning protection.

He neutralized tubes
In my linear amp...
(Never worked right before--
Now it works like a champ).

A new, low-pass filter
Cleaned up the TV,
He corrected the settings
In my TNC

He repaired the computer
That would not compute,
And he backed up the hard drive
And got it to boot.

Then, he reached really deep
In the bag that he brought,
And he pulled out a big box,
"A new rig?" I thought!

"A new Kenwood? An Icom?
A Yaesu, for me?!"
(If he thought I'd been bad
It might be QRP!)

Yes! The Ultimate Station!
How could I deserve this?
Could it be all those hours
that I worked Public Service?

He hooked it all up
And in record time, quickly
Worked 100 countries,
All down on 160.

I should have been happy,
It was my call he sent,
But the cards and the postage
Will cost two month's rent!

He made final adjustments,
And left a card by the key:
"To Gary, from Santa Claus.
Seventy-three."

Then he grabbed his HT

Looked me straight in the eye,
Punched a code on the pad,
And was gone - no good bye.

I ran back to the station,
And the pile-up was big,
But a card from St. Nick
Would be worth my new rig.

Oh, too late, for his final
came over the air.
It was copied all over.
It was heard everywhere.

The Ham's Santa exclaimed
What a ham might expect,
"Merry Christmas to all,
And to all, good DX."

+++++

RF Exposure & WRC 97

Russ Ely WL7LP w7lp@alaska.net

1. RF Exposure Compliance

Supplement B to OET #65, which is written to assist amateurs in evaluating their stations, was released late Tuesday on the FCC web site.

Fortunately I have been able to obtain a copy via e-mail from a Technical Adviser in the Division. Counting all the tables it comes out to be over 80 pages. I have been wading through the material and find it quite useful for evaluating stations. A couple of things need to be pointed out to the amateurs in your area. One is that the tables represent a worst case situation, i.e. key down for 30 minutes. In other words the duty cycle is not taken into consideration. However, amateurs are permitted to take duty cycles into consideration in their final calculations. The document also gives typical duty cycles for several modes of operation. Most people can simply look at the tables and determine that they are in compliance. Although they may need to figure in their duty cycle. Information on how to figure duty cycle for the various modes is given in the worksheet section of the document. If they are within the limits, that is it. If not or borderline they may wish to go through the process of figuring it out from scratch or by using an acceptable computer analysis program. I tried out the worksheet on our set up for the 10 meter band and though at first glance all was not clear, I did manage to work through it and come out in agreement with the ARRL tables which are based on NEC 4 antenna modeling program.

As of January 1, 1998 all amateurs must be in compliance with the new regulations. There is no paper work that one has to do. However, whenever one fills in a 610 Form one will have to sign that they have read the regulations and that

they operating their station in compliance with the regulations.

The January issue of QST, which comes out in mid-December will have additional information to assist the amateurs in evaluating their stations. Supplement B is available for downloading from:

<http://www.fcc.gov/oet/info/documents/bulletins/#65>

It can be downloaded in either Word Perfect or Adobe Acrobat formats.

WRC-97

The conference ended today. We have received a brief report on some of the key matters of interest to amateur radio. A summary follows:

1. Earth Exploration Satellites: A proposal we did not about ahead of time came from the Netherlands and proposed to allocate 432-438 MHz for the synthetic aperture radar used by the system. These operate from an altitude of 750 km and use 400 W of power. The antenna which has a circular diameter of 7 meters with a gain of 27.9 dBw. Therefore, these would have strong signals at the earth's surface. The satellites are used to map the earth's surface and for monitoring the conditions in rain forests. At this WRC no allocation was made. However, the matter has been placed on the agenda for WRC-99, when an allocation of 6MHz in the 420-470 MHz band will be considered. In the meantime studies are to be conducted to determine sharing possibilities.

2. Little LEO's

There is NO immediate threat to current amateur frequencies. These satellites did receive a small allocation at 400 MHz, 150 MHz, and 454 MHz. The latter is primarily only in North America. The matter will be taken up again at WRC-99 after new sharing studies have been completed to determine which services they could share with for 7-10 MHz more of additional spectrum. Hence, 2 meters and 70 cm bands could again be placed in jeopardy.

3. Wind profiler radar.

Going into the conference there was some concern regarding the effect of requests for wind profiler radar on the amateur bands. The outcome was no change in the situation for U.S. amateurs. We had agreed in advance for coordination around 449 MHz to avoid interference to repeater operations.

4. Adaptive MF/HF.

These are systems used by the U.S. government agencies for automatic link establishment. A Resolution was adopted that provides they will not be assigned to bands where the amateur service is primary or co-primary. This is a situation that may bear watching in the future.

5. Future WRC's

There is some concern that meeting every two years is too frequent as more time is needed for adequate preparation.

Hence WRC-99 may be moved up to the year 2000 and WRC-2001 could be moved to the year 2003. Because of the crowded agenda the amateur regulations may not be taken up until 2001 (2003 if the schedule is changed).

Rubber - Dummy Loads

by Doug Dickinson, KL7IKX

After over a year of reading the mail it has become evident that many users are not aware as to what the results can actually be expected from a hand held radio. (Handi-Talkie or "HT"). Complaints of: I can hear the repeater, but it doesn't hear me, the last user was nothing but noise, your pretty broken up say again, there's something wrong with the repeater I can't understand a word your saying, or my favorite "talk louder" your SIGNAL is pretty weak etc. etc. etc..

It's probably time to remind our older (i.e.: long time users, not 'old') users, and help our newer users understand the difference between their hand held radio, and the mobile, or base radio they use.

A standard mobile or base radio puts out somewhere between 25 and 100 watts. This power normally goes to a gain type antenna mounted on a near perfect ground plane. The resultant effective radiated power is in the order of 50 to 200 watts! (Assuming of course your not running a 100 feet of RG-58/U to get from the mobile or base to the antenna...you aren't are you? You did keep the cable short [EXCEPT ! in the case of glass mount antenna's where the cable length is CRITICAL to proper operation of the antenna], used good connectors, and a good cable, not some of the stuff on the market for the 'least price', that has hole's in the braid, and sometimes in the outer jacket. In the Receive mode the gain of the antenna, good ground plane (car roof etc.) height above ground, and reasonably clear of surrounding objects that can detune the antenna, or absorb RF is very helpful. In addition the overall sensitivity and selectivity of a mobile or base radio is most times superior to a portable radio.

Most portable radio's have a power of between 50 milliwatts, and 6 watts. This power is then fed into a 'rubber ducky' (no not the type you take into the bathtub!). A 'rubber duck' has NO GAIN ! (and doesn't float in the tub). Portable radio's have a poor to non-existent ground plane. So the expected radiated power is 50 % or LESS of the 'selected power'. Handhelds have a tendency to run down their attached re-chargeable, or throw away batteries, and since the output power is directly proportional to the input voltage, a loss of power from battery discharge also affects your transmit signal. Receive signal suffers from the NO GAIN rubber ducky' antenna also.

Now starting with fairly low power, without a good ground plane, into a NO GAIN antenna, you need to be sure your antenna is vertical, I know it's 'cool' to hold the antenna like a cell phone, but this severely cuts down your transmit range. Almost ALL repeater antenna's are vertically polarized, meaning the majority of the input signal, and the majority of the output signal is radiated into the air in a vertical plane. Users can expect up to a 30DB LOSS in signal strength at the receiver site, and receiver signal at your end by how far off vertical your holding your antenna. Remember 3 dB is a half power increase or decrease in your power, or signal strength, so 30DB is quite significant.

A critical point is NOT TO YELL INTO THE MICROPHONE, be it a handheld or mobile / base radio. In FM (such as the majority of handhelds and mobile / base radio's are) LOUDER AUDIO DOES NOT MEAN NOT EQUAL MORE POWER OUT! What it does mean is more distortion to your audio signal, and if your radio transmitter audio limiter is not set correctly you can actually 'talk off' the repeater. This happens when your deviation exceeds what the receiver can handle, if your deviation passes above 5 KHz, most repeaters will begin to squelch off, pass about 7 KHz in peak deviation, and the receiver will think your transmit signal is nothing but NOISE, and stop passing your signal.

The following table summarizes the difference between the hand held and a mobile or base radio.

<u>Feature</u>	<u>Hand Held</u>	<u>Mobile /Base</u>
Output Power	50 mW - 6 W	10 - 100 Watts
Antenna	poor	fair to excellent
Power Supply	small, rapid discharge	large, continuously charged.
Sensitivity	medium to high	high
Selectivity	poor to medium	medium to excellent
Receive audio	100 - 500mW	5 - 10w

The table below shows the typical LOSS expected with different portable antennas in various operating situations: The larger the number, the worse!

Band / Situation	146 MHz	446 MHz
<i>Handheld, held vertical</i>		
Quarter wave	0dB	9dB
Telescopic retracted	3dB	10dB
Helical rubber duck	8dB	14dB
<i>Handheld, held at an angle</i>		
Quarter wave	3dB	18dB
Telescopic retracted	10dB	19dB
Helical rubber duck	12dB	24dB
<i>On a Belt Clip or in a Chest Harness</i>		
Quarter wave	6dB	14dB
Telescopic retracted	38dB	40dB
Helical rubber duck	22dB	14dB

The table below shows typical building and shielding losses

Band	146 MHz	446 MHz
Office or High Rise	30dB	24dB
Shopping Center	20dB	20dB
Frame Construction	3dB	3dB

Typical Shielding Loss	146 MHz	446 MHz
8" Concrete Brick	6-8dB	3-5dB
6" Solid concrete, no rebar	10-15dB	5-10dB
Suspended Metal Walls	20-40dB	10-20dB
Corners in narrow passageways	15-20dB	8-10dB
Passenger car	20-40dB	10-20dB

You will note that signals do better at the UHF portion of the band, a little thought will make this clear. UHF is considerably shorter in wavelength than VHF, and the shorter wavelengths squeeze through smaller 'holes' than RF at VHF frequencies. A good demo of this is have a dual band handheld, start a QSO and on VHF and UHF, then step into an elevator and let the door close, as the door closes you will usually lose the VHF signal, however the UHF signal will continue, attenuated, but still there.

Don't even get me started on 'stubby ducks etc., convenient for short range, cool looking etc. but they are a serious disadvantage for reliable communications. Cell phones etc. get away with stubby antenna's because they operate in the 800 MHz band and above, have lots of 'cell sites' to grab the weak signals and lots of transmitters to address your handheld phone.

In conclusion (thought I'd never get there huh?) You start off down the road, in your new car, with your handheld with it's helical (rubber duck) antenna, laying beside you on the car seat. Your listening to the morning drive time on the local repeater (or worse a simplex frequency), you can hear the other folks just fine, but they aren't hearing you. Well lets see.

1st. Your power is I would hope at the highest level your radio is capable of, preferably running on a 12v noise suppressed external power cable. Still your only running, lets say 2 watts.

2nd. Your inside your own RF cavity' (not tuned or resonate at the frequency, fortunately for you) Your loss to begin with is: somewhere between -32 and -42db, remembering that -3db is A 50 PERCENT REDUCTION IN OUTPUT POWER AND INPUT SIGNAL AT THE ANTENNA. If your lucky your radiating milliwatts of power, if your not so lucky, your down in the picowatt level. There is just NO WAY that your signal is going to be reliably picked up by the repeater or simplex receiver.

Handheld radio's are great, I have between the office and my amateur activities, eight different handhelds for different bands, and different services. BUT YOU HAVE TO BE AWARE OF THE LIMITATIONS OF THE RADIO, IF YOU EXPECT TO HAVE RELIABLE COMMUNICATIONS.

Would you want to be in a life threatening situation, and have to rely on a communications device that is marginal at best? Take some time to find out the approximate location of the local repeaters and try to visualize in your mind the path your radio signal must take to get to those repeaters, a hill between you and the repeater, try moving away from the hill, or around it. Big building between you and the repeater, try moving a bit. For every quarter wavelength there may be an increase or decrease in the signal that the repeater hears from you, and how you hear the repeater. 19 inch's in a average quarter wave length at two meters, and about 6 inch's is average for the UHF band. So you may not have to move very far to find a 'hot spot'.

To The Stars

By Armand Lucchesi - WA2SHA - 1612

If a man wanted to travel to the stars, there would be some formidable problems to be overcome, especially the energy requirement. Let's create an example. The spaceship will weigh 100 tons. The trip is to be made to the star nearest to us, Proxima Centuri, which is about 4.3 light years distant. We will assume that the technology in place at that future date will permit space vehicle speeds of 10,000 miles per second, a velocity impossible to approach by today's techniques. That velocity would allow a round trip time of about 161 years. A few generations would have to man the spaceship, through.

The propulsion energy required to make this trip can be represented by the formula; $2 \times \text{Mass} \times \text{Velocity Squared}$. This turns out to be a very large value. In fact, it about equals the total electric energy that would be generated by a typical electric generating plant (1000 MW) running continuously for 1499 years!!

You be the judge. Will this ever be possible???

Boy Scouts Jamboree on the Air, recognition of involved club members

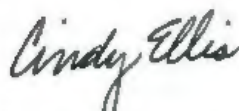
October 23, 1997

Rick Marvin
Dan Spears

Dear Rick and Dan,

Thank you so much for helping our Cub Scouts with the Boy Scouts Jamboree on the Air on October 18. They enjoyed talking on the ham radios and doing some Morse code. In cub scouting, our goal is to introduce the boys to many fun and interesting activities, such as ham radios, so that they might develop into well rounded citizens with a variety of hobbies. Without people like you who are willing to give their time and share their talents, we would not be able to attain that goal. Thanks again for sharing your ham radio hobby with our boys.

Sincerely yours,



Cindy Ellis
Assistant Cubmaster
Pack 212

AARC95-All Accounts
11/11/97

Balance Sheet
As of 11/11/97

Account	11/11/97 Balance

ASSETS	
CURRENT ASSETS	
AARC Gaming-	28,537.54
AARC Holding-	1,144.54
Bond Account-	5,174.15
Business Acct-	4,223.60
Life Membership-	24,033.20

TOTAL CURRENT ASSETS	63,113.03

TOTAL ASSETS	63,113.03
	=====
 TOTAL LIABILITIES	 0.00
EQUITY	
EQUITY ACCOUNTS	
Open Bal Equity-Opening Bal Equity	65,479.17

TOTAL EQUITY ACCOUNTS	65,479.17

CURRENT EARNINGS	-2,366.14

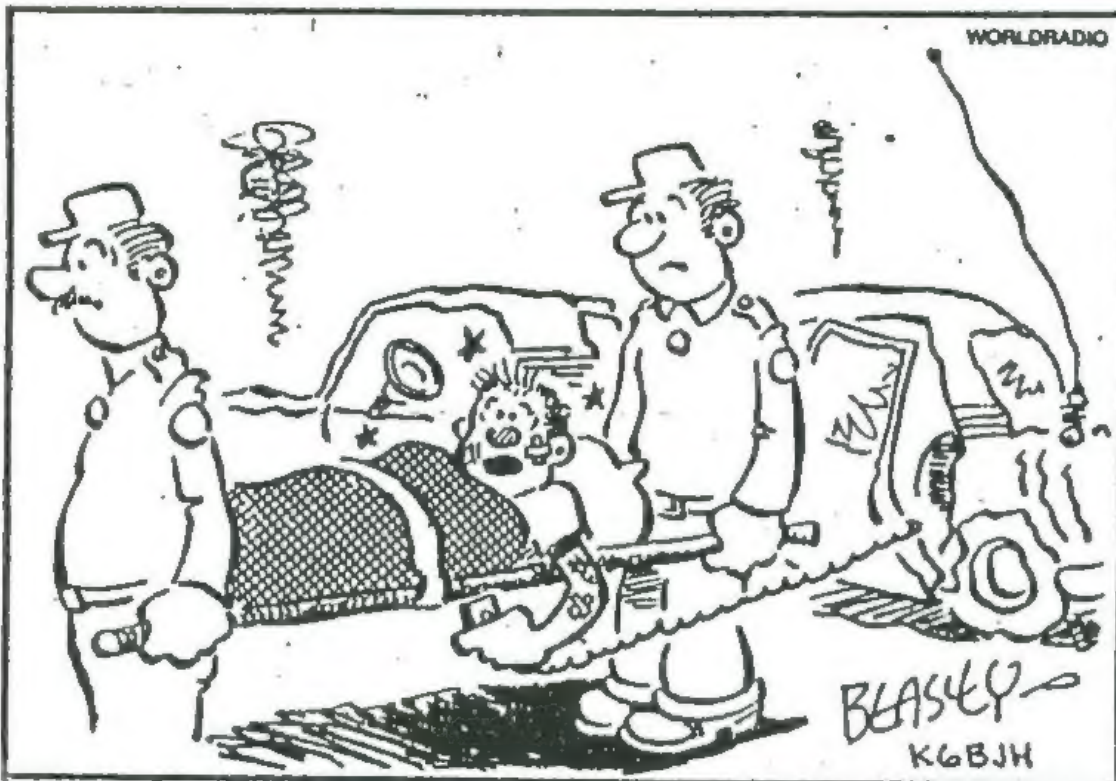
TOTAL EQUITY	63,113.03

TOTAL LIABILITIES AND EQUITY	63,113.03
	=====

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WHAT DO YOU MEAN, TERMINATE THE QSO? MAN,
I'M WORKING NEW ZEALAND ON 6 METERS!